

Abstract of the Disclosure

Programmable fuses for integrated circuits are provided. The fuses may be based on polysilicon or crystalline silicon fuse links coated with silicide or other conductive thin films. Fuses may be formed on silicon-on-insulator (SOI) substrates. A fuse may be blown by applying a programming current to the fuse link. The silicon or polysilicon in the fuses may be provided with a p-n junction. When a fuse is programmed, the silicide or other conductive film forms an open circuit. This forces current through the underlying p-n junction. Unlike conventional silicided polysilicon fuses, fuses with p-n junctions change their qualitative behavior when programmed. Unprogrammed fuses behave like resistors, while programmed fuses behave like diodes. The presence of the p-n junction allows sensing circuitry to determine in a highly accurate qualitative fashion whether a given fuse has been programmed.